Claims

[c1]   A method of controlling an automotive vehicle comprising:

detecting a parking mode;

in the parking mode, applying brake-steer at a first wheel to reduce a vehicle turning radius;

simultaneously with the step of applying brake-steer, increasing the normal load on at least one of the wheels.

[c2]   A method as recited in claim 1 wherein the at least one of the wheels comprises a rear wheel.

[c3]   A method as recited in claim 1 wherein the at least one of the wheels comprises a rear inside wheel relative to a turn.

[c4]   A method as recited in claim 1 wherein detecting a parking mode comprises detecting a parking mode in response to a vehicle speed.

[c5]   A method as recited in claim 1 wherein detecting a parking mode comprises detecting a parking mode in response to a steering wheel angle.

[c6]   A method as recited in claim 1 wherein detecting a park-

ing mode comprises detecting a parking mode in response to a vehicle speed and a steering angle.

[c7] A method as recited in claim 1 wherein detecting a parking mode comprises detecting a parking mode in response to a driver-actuated switch.

[c8] A method as recited in claim 1 wherein the step of applying brake-steer comprises applying a first brake.

[c9] A method as recited in claim 1 wherein the step of applying brake-steer comprises applying a first brake and a second brake to reduce the turning radius of the vehicle.

[c10] A method as recited in claim 1 wherein applying brake-steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.

[c11] A method as recited in claim 1 wherein applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

[c12] A method as recited in claim 1 wherein increasing the normal load comprises controlling an active suspension.

[c13] A method as recited in claim 1 wherein increasing the normal load comprises controlling an air suspension.

[c14]   A system of controlling an automotive vehicle having a plurality of brakes comprising:
means to detect a parking mode; and
a controller programmed to apply brake-steer to at least a first wheel in the parking mode, and to increase a normal load on a wheel to reduce a vehicle turning radius.

[c15]   A method as recited in claim 14 wherein the wheel comprises a rear wheel.

[c16]   A method as recited in claim 14 wherein the at least one of the wheels comprises a rear inside wheel relative to a turn.

[c17]   A system as recited in claim 14 further comprising an active suspension, said controller increasing the normal load by changing the active suspension.

[c18]   A system as recited in claim 14 wherein said means to detect a parking mode comprises a vehicle speed sensor.

[c19]   A system as recited in claim 14 wherein said means to detect a parking mode comprises a steering wheel angle sensor.

[c20]   A system as recited in claim 14 wherein said means to detect a parking mode comprises a vehicle speed sensor and a steering wheel angle sensor.

[c21]   A system as recited in claim 14 wherein said means to detect a parking mode comprises a driver-actuated switch.

[c22]   A system as recited in claim 14 wherein said controller is programmed to brake-steer by applying a first brake and a second brake to reduce the turning radius of the vehicle.

[c23]   A system as recited in claim 14 wherein said controller is programmed to apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius.

[c24]   A system as recited in claim 14 wherein said controller is programmed to apply brake-steer by applying an increased drive torque to a second wheel relative to the first wheel.

[c25]   A method of controlling an automotive vehicle comprising:
detecting a parking mode;
detecting a vehicle loading condition; and
applying brake-steer to the vehicle wheels in response to the parking mode and the vehicle loading condition.

[c26]   A method as recited in claim 25 wherein applying brake-

steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.

[c27] A method as recited in claim 25 wherein applying brake-steer comprises applying an increased drive torque to a second wheel relative to the first wheel.

[c28] A method as recited in claim 25 applying brake-steer comprises increasing the normal load on the rear wheels.

[c29] A method as recited in claim 25 wherein detecting a normal load condition comprises determining a loading response to a wheel speed and throttle signal.

[c30] A method as recited in claim 25 wherein detecting a parking mode comprises detecting a parking mode in response to a vehicle speed.

[c31] A method as recited in claim 25 wherein detecting a parking mode comprises detecting a parking mode in response to a steering wheel angle.

[c32] A method as recited in claim 25 wherein detecting a parking mode comprises detecting a parking mode in response to a vehicle speed and a steering angle.

[c33] A method as recited in claim 25 wherein detecting a parking mode comprises detecting a parking mode in response to a driver-actuated switch.

[c34]   A method of controlling an automotive vehicle comprising:

detecting a parking mode;

in the parking mode, applying at least one brake at a first wheel to reduce a vehicle turning radius;

simultaneously with the step of applying at least one brake, applying drive torque to a second wheel; and

increasing the normal load on the rear wheels.

[c35]   A method as recited in claim 34 wherein increasing the normal load comprises controlling an active suspension.

[c36]   A method as recited in claim 34 wherein increasing the normal load comprises controlling an air suspension.

[c37]   A method as recited in claim 34 wherein detecting a parking mode comprises detecting a parking mode in response to a vehicle speed.

[c38]   A method as recited in claim 34 wherein detecting a parking mode comprises detecting a parking mode in response to a steering wheel angle.

[c39]   A method as recited in claim 34 wherein detecting a parking mode comprises detecting a parking mode in response to a vehicle speed and a steering angle.

[c40]   A method as recited in claim 34 wherein detecting a

parking mode comprises detecting a parking mode in response to a driver-actuated switch.

[c41] A system for controlling an automotive vehicle having a brake system comprising:

means to detect a parking mode;

means to determine a vehicle loading condition; and

a controller coupled to the means to detect a parking mode and the means to determine a vehicle loading condition, said controller applying brake-steer to the vehicle wheels in response to the parking mode and the vehicle loading condition.

[c42] A system as recited in claim 41 wherein said means to detect a parking mode comprises a vehicle speed sensor.

[c43] A system as recited in claim 41 wherein said means to detect a parking mode comprises a steering wheel angle sensor.

[c44] A system as recited in claim 41 wherein said means to detect a parking mode comprises a vehicle speed sensor and a steering wheel angle sensor.

[c45] A system as recited in claim 41 wherein said means to detect a parking mode comprises a driver-actuated switch.

[c46] A system as recited in claim 41 wherein said means to determine a loading condition comprises a yaw stability control system.

[c47] A system as recited in claim 41 wherein said means to determine a loading condition comprises a load sensor.

[c48] A system as recited in claim 41 wherein said means to determine a loading condition comprises a plurality of wheel speed sensors and a throttle sensor.

[c49] A system as recited in claim 41 wherein said means to determine a loading condition comprises a suspension height sensor.